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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/753,259	12/29/2000	Louis A. Lippincott	42390P9946	8787

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EXAMINER

SINGH, DALIP K

ART UNIT	PAPER NUMBER
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2676

DATE MAILED: 02/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/753,259

Applicant(s)

LIPPINCOTT, LOUIS A.

Examiner

Dalip K Singh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Response to Amendment

1. This Office Action is in response to applicant's Request for Continued Examination (RCE) dated November 11, 2003 in response to PTO Office Action dated October 27, 2003. The amendments to claim(s) 1, 9, 10, 21 and 26 have been noted and entered in the record, and applicant's remarks have been carefully considered resulting in the action as set forth herein below.

2. Applicant's arguments filed November 11, 2003 have been fully considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim(s) 1, 2, 10, 16, 22 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,742,788 to Priem et al. (Priem1) in view of U.S. Patent No. 5,008,838 to Kelleher et al.

a. Regarding claim 1, Priem et al. **discloses** a dual frame buffer system (Figure 3), comprising: a first frame buffer (first frame buffer 43); a second frame buffer (second frame buffer 44); and a controller (control circuits 40 and 41) for copying updated data (...once new data has been written to the first portion 43...col. 11, lines 22-25) from the first frame buffer (first frame buffer 43) to the second frame buffer (second frame buffer 44) when updated data is needed to refresh the display monitor (col. 11, lines 1-45).

However, Priem et al. **is silent about** a controller (control circuits 40 and 41) to

simultaneously copy updated from the first frame buffer (first frame buffer 43) to both the second frame buffer (second frame buffer 44) and to the display monitor when the updated data is needed to refresh the display monitor. Kelleher et al. **discloses** wherein when one of the frame buffers which has the most recently updated data is coupled to provide the updated data directly to a DAC or in other words directly to the display (...the most recently updated one of the two buffers is...provide pixel color information directly to a DAC...col. 5, lines 27-37). Therefore, it would have been obvious to a person of ordinary skill in the art at the time invention was made to modify the double frame buffers operations as taught by Priem et al. with the feature "where updated goes to the second frame buffer as well as to the display monitor" as taught by Kelleher **because** it permits a graphics system to more rapidly process information used to generate graphics images.

b. Regarding claim 2, Priem et al. **discloses** wherein the controller (control circuits 40 and 41) coordinates refresh of the display monitor using data stored in the second frame buffer (second frame buffer 44) and data updated (...once new data has been written to the first...col. 11, lines 23-24) within the first frame buffer (first (invisible frame buffer) portion 43) (...the control circuits cause data to be copied...read from the first frame buffer...and written to the second frame buffer...simultaneously...col. 11, lines 22-45).

c. Regarding claims 10, it is similar in scope to claim 2 above and is rejected under the same rationale.

d. Regarding claims 16 and 22, they are similar in scope to claim 10 above and are rejected under the same rationale.

e. Regarding claim 26, it is similar in scope to claim 1 above and is rejected under the same rationale.

5. Claims 3, 11 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,742,788 to Priem et al. (Priem1) in view of U.S. Patent No. 5,008,838 to Kelleher et al. as applied to claim 1 above, and further in view of U.S. Patent No. 5,724,608 to Tohara, and further in view of U.S. Patent No. 5,543,824 to Priem et al (Priem2).

a. Regarding claims 3 and 11, Priem1-Kelleher combination et al. **does not disclose** the dual frame buffer system, further comprising: a first address generator corresponding to the first frame buffer; a second address generator corresponding to the second frame buffer. Tohara **discloses** a first address generator (1st address generator 5) corresponding to the first frame buffer (1st buffer 12); a second address generator (2nd address generator 5A) corresponding to the second frame buffer (2nd buffer) (Figure 5, col. 5, lines 66-67; col. 6, lines 1-21). Therefore, it would have been obvious to a person of ordinary skill in the art at the time invention was made to modify Priem1-Kelleher combination with the feature “independent address generators for each frame buffers” as taught by Tohara **because** it affords a more flexible processing of data. However, Priem1-Kelleher-Tohara combination **is silent about** a timing generator for coordinating the timing between the first and second address generators for refreshing the display monitor. Priem2 **discloses** a timing generator (video timing generator 22) for coordinating the timing between the first and second address generators for refreshing the display monitor (col. 4, lines 30-45). Therefore, it would have been obvious to a person of ordinary skill in the art at the time invention was made to modify the device as taught by Priem1-Kelleher-Tohara combination with the feature “timing generator” as taught by Priem2 because address generators provides for a simple processing system design and the timing generator frees up the central processing system for other tasks.

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b. Regarding claim 27, it is similar in scope to claim 11 above and is rejected under the same rationale.

6. Claims 4-6, 12-15, 17-19, 21, 23-25, 28, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,742,788 to Priem et al. (Priem1) in view of U.S. Patent No. 5,008,838 to Kelleher et al. as applied to claim 1 above, and further in view of U.S. Patent No. 5,724,608 to Tohara, and further in view of U.S. Patent No. 5,543,824 to Priem et al (Priem2) as applied to claim 3 above, and further in view of U.S. Patent No. 5,757,364 to Ozawa et al.

a. Regarding claims 4 and 12, Priem1-Kelleher-Tohara-Priem2 combination **does not disclose** a detector for detecting when an update is made to the data in the first frame buffer; and a decoder for decoding the location of the updated data, wherein the controller simultaneously transmits the updated data from the first frame buffer to the second frame buffer and the display monitor when the display monitor is refreshed. Ozawa et al. **discloses** a detector (window type table 132, comparator 118) for detecting when an update is made to the data in the first frame buffer; and a decoder (selector 121) for decoding the location of the updated data (col. 4, lines 36-48; col. 5, lines 1-67; col. 6, lines 1-41). Therefore, it would have been obvious to a person of ordinary skill in the art at the time invention was made to modify Priem1-Kelleher-Tohara-Priem2 combination with the feature "detector and decoding and transmitting only the updated data" as taught by Ozawa et al. **because** it provides for efficiently rendering frames by transmitting only the updated data and provides for efficient real time displaying dynamic images (col. 1, lines 40-67).

b. Regarding claims 5 and 13, Priem2 et al. **discloses** wherein the first frame buffer comprises a plurality of regions (contiguous memory 42...is constructed of VRAM...col. 7, lines 47-67; col. 8, lines 1-7).

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- c. Regarding claims 6 and 14, they are similar in scope to claim 4 above and are rejected under the same rationale.
 - d. Regarding claims 15, 17, 21 and 23, they are similar in scope to claim 12 above and are rejected under the same rationale.
 - e. Regarding claims 18, 24 and 28, they are similar in scope to claim 13 above and are rejected under the same rationale.
 - f. Regarding claims 19 and 25, they are similar in scope to claim 14 above and are rejected under the same rationale.
 - g. Regarding claim 29, it is similar in scope to claim 4 above and is rejected under the same rationale.
 - h. Regarding claim 30, it is similar in scope to claim 6 above and is rejected under the same rationale.
7. Claims 7-9 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,742,788 to Priem et al. (Priem1) in view of U.S. Patent No. 5,008,838 to Kelleher et al. as applied to claim 1 above, and further in view of U.S. Patent No. 5,790,138 to Hsu.
- a. Regarding claims 7 and 9, Priem1-Kelleher **does not disclose** wherein the first frame buffer is part of a unified memory architecture. Hsu **discloses** a computer unified memory architecture system wherein the first frame buffer (frame buffer memory 304b) is part of a unified memory architecture (col. 3, lines 65-67; col. 4, lines 1-9). Therefore, it would have been obvious to a person of ordinary skill in the art at the time invention was made to modify Priem1-Kelleher with the feature “frame buffer as part of a unified memory architecture” as taught by Hsu **because** it provides for a lower system cost (col. 1, lines 62-65).

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b. Regarding claim 8, Priem1-Kelleher as modified by Hsu **discloses** wherein the second frame buffer (expansion frame buffer memory 306) stores data used to refresh the display monitor (col. 3, lines 65-67; col. 4, lines 1-9).

c. Regarding claim 20, it is similar in scope to claim 9 above and is rejected under the same rationale.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Dalip K. Singh** whose telephone number is **(703) 305-3895**.

The examiner can normally be reached on Mon-Thu (8:00AM-6:30PM) Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Matthew Bella**, can be reached at **(703) 308-6829**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

dks

February 5, 2004



MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600